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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/727,729

12/04/2003

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BCS03157

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43471

7590

01/23/2009

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EXAMINER

FEATHERSTONE, MARK D

ART UNIT

PAPER NUMBER

2423

NOTIFICATION DATE

DELIVERY MODE

01/23/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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Docketing.US@motorola.com



## **DETAILED ACTION**

### ***Response to Amendment***

Response to amendment filed 12/05/2008. No claims have been amended. Claims 1-30 are pending.

### ***Response to Arguments***

Applicant's arguments filed 12/05/2008 been fully considered but they are not persuasive. With regard to independent claims 1, 9, 20, and 24, applicant argues that Laksono fails to teach reserving a predetermined amount of bandwidth in one or more multiplexers of a node group to future transcoding. In support of this contention, applicant argues that Laksono describes setting up a bandwidth threshold for every connection (see applicant's remarks – page 13). Examiner respectfully disagrees with this interpretation of Laksono. In paragraph [0014]; Laksono clearly establishes that the bandwidth utilization of the system is determined to determine if the total bandwidth has passed a threshold (Laksono states that the user could wait until the bandwidth utilization of the system falls back below the threshold. This is clearly different than the bandwidth of an individual connection. Setting a threshold in this way is equivalent to applicant's claims of reserving a predetermined amount of bandwidth to future transcoding. The amount of bandwidth above the threshold is "reserved" by Laksono, and may be used to send the user a transcoded version of the content (paragraph [0021]; Laksono establishes that the user could receive a lower video quality video (which implies transcoding) to use less bandwidth).

Applicant further argues that Laksono fails to teach routing one or more subsequent new video sessions through a central transcoder after all unreserved bandwidth of a node group is allocated, and that there is no “central transcoder” in the system. As described in paragraph [0021]; one or more of the video sessions can be transcoded to a lower bit rate after the threshold bandwidth has been exceeded. The user is presented a choice to receive a reduced bit-rate version of the video session. These video sessions could be routed to one or more "central transcoders" within the system, which are “centralized” with respect to the end-user. The claim does not require a single transcoder in which all new sessions are transmitted to in order to be transcoded.

Applicant further argues on page 10-11 of applicant's remarks that Laksono in view of Levesque or any other reference is an improper basis for rejecting applicant's claims under 35 U.S.C. § 103, and that Laksono teaches away from “routing one or more subsequent new video sessions through a central transcoder”, and that Laksono suggests that transcoding is inherently disadvantageous. Examiner respectfully disagrees. Laksono clearly does not teach away from routing a video session through a transcoder given that he does route a new video session through a transcoder if the bandwidth threshold is met (see paragraph [0021]). Laksono teaches that transcoding is advantageous in order to decrease bandwidth usage of one video session in order to increase the total number of video sessions. Transcoding to a lower bit rate stream does decrease the quality of the video as known in the art, which is why Laksono (and

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applicant) avoids transcoding until a certain threshold bandwidth has been consumed.

In view of the foregoing, the rejection mailed 08/07/2008 stands.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent; or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for the purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English.

2. Claims 1-2, 4, 9-12, 15, 20-21, and 23-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Laksono et al, US PG Pub # 20030046704.

With regard to claim 1, Laksono discloses:

Reserving a predetermined amount of bandwidth in one or more modules of a node group to future transcoding (Figure 1 illustrates a network for a VOD system with multiple connections each containing QAM (item 26, 28, 30, 32), and client devices (representing a node group) connected through the network; [0018], Laksono describes determining if bandwidth exceeds a certain threshold corresponding to a reserve bandwidth [0023]; Laksono describes determining the quantity of video programs currently being supported by the connection of the

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video system that will need to support the requested video program, corresponding to a multiplexer functionality in the QAM).

Assigning one or more new video sessions to one or more unused slots in each module of the node group until all unreserved bandwidth is allocated ([0018]; Laksono describes that if the bandwidth utilization is below the threshold, the server will provide the program to the user via the QAM)

Routing one or more subsequent new video sessions through a central decoder after all unreserved bandwidth of a node group is allocated ([0021]; Laksono describes that if the bandwidth utilization exceeds a threshold, the system will provide the user with a list of options, one of which is to receive a transcoded version of the content to lower the bandwidth requirement).

With regard to claims 2 and 4, Laksono discloses the apparatus according to claim 1. Laksono further discloses assigning bandwidth that becomes available from one or more terminated video sessions on a given multiplexer in the node group for use by the central transcoder to form a transcoded group of channels for the given multiplexer ([0026]; Laksono describes that if the bandwidth utilization exceed a second threshold, the server will reclaim the bandwidth from the client devices that elected to receive the stream at the nominal fee, and use for the client devices that elected to receive the program at an increased fee; [0021]; Laksono describes that one of the options of receiving the program at the increased fee is to receive the program transcoded at a reduced bit-rate, therefore, the one or more customers that receive the program

this way will form a transcoded group of channels for that connection, as recited in claim 4).

Claims 9-10 are incorporated in claim 1, and are analyzed and rejected as applied.

With regard to claims 11-12, Laksono discloses the method of claim 9 by disclosing assigning new channels to unused slots in the multiplexer until the unreserved space is filled. Laksono further discloses forming a transcoded group of channels for the multiplexer from bandwidth that becomes available from one or more terminated channels in the multiplexer ([0026]; Laksono describes that if the bandwidth utilization exceed a second threshold, the server will reclaim the channel bandwidth from the client devices that elected to receive the stream at the nominal fee, and use the channel for the client devices that elected to receive the program at an increased fee; [0021]; Laksono describes that one of the options of receiving the program at the increased fee is to receive the program transcoded at a reduced bit-rate, therefore, the one or more customers that receive the program this way will form a transcoded (or compressed, as recited in claim 12, since transcoding in this case refers to lowering the bit rate) group of channels for that connection).

With regard to claim 15, Laksono discloses the method of claim 9. Laksono further discloses expanding an existing transcoded group of channels associated with the multiplexer using bandwidth from one or more terminated channels assigned to the multiplexer ([0026]; Laksono describes that if the

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bandwidth utilization for a given multiplexer exceed a second threshold, the server will reclaim the channel bandwidth from the client devices that elected to receive the stream at the nominal fee, and use the channel for the client devices that elected to receive the program at an increased fee, the server will continue to do this until the bandwidth utilization is falls below the threshold, thus adding to the transcoded channels each time);

With regard to claim 20, Laksono discloses an apparatus for processing video signals requested by viewers (Figure 1, VOD server 12) comprising:

A central transcoder (Figure 1, item 10; VOD Server and [0021]; Laksono describes a VOD server that transcodes a video program to a lower bit-rate rate and delivers it to a customer if the customer chooses to view the program at a reduced fee, or if the viewer choose to view the program at a reduced fee and not be preempted by another customer)

One or more video servers, each outputting one or more video signals requested by users (Figure 1, item 10 VOD server serving customer devices 26-34)

One or more edge devices, each outputting a node group of signals for transmission to each of the users, wherein each edge device includes one or more multiplexers, and each multiplexer includes a plurality of channel slots (Figure 1, QAM items 26-32 and [0024]; Laksono describes a process where the server determines the bandwidth utilization of each connection. For example, the



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connection may be supporting 7 video programs out of 11 possible video programs (corresponding to channel slots).

A network coupling the one or more video servers to one or more edge devices and the central transcoder (Figure 1; Laksono describes a connection to each of the QAM edge devices, a network 14 to connect to the client devices, and a QAM 24 used to connect back to the server (where the transcoding takes place) for upstream communication)

A processor assigning each of the one or more video signals output by the one or more servers to one channel slot of the one or more channel slots in one multiplexer of the one or more multiplexers in one edge device of the one or more edge devices (Figure 1, item 34 processing module and [0024]; Server determines the bandwidth utilization of each connection, and the next video that is determined to be sent via the given QAM and corresponding multiplexer will be restricted).

Reserving a predetermined amount of bandwidth in each of the one or more edge devices to future transcoding (Figure 1 illustrates a network for a VOD system with multiple connections each containing QAM (item 26, 28, 30, 32), and client devices (representing a node group) connected through the network; [0018], Laksono describes determining if bandwidth exceeds a certain threshold corresponding to a reserve bandwidth [0023]; Laksono describes determining the quantity of video programs currently being supported by the connection of the

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video system that will need to support the requested video program, corresponding to a multiplexer functionality in the QAM)

Assigning one or more new user requested video signals to one or more unused channel slots in a particular multiplexer of the one or more multiplexers of a particular edge device of the one or more edge devices until all unreserved bandwidth is allocated in the particular edge device of the one or more edge devices ([0018], Laksono describes that if the bandwidth utilization is below the threshold, the server will provide the program to the user via the QAM); [0024], Laksono describes if the bandwidth is below the threshold, the request would be processed without restriction)

Routing one or more subsequent new user requested video signals that is designated for a particular edge device of the one or more edge devices through the central transcoder after all unreserved bandwidth of the particular edge device of the one or more edge devices is allocated ([0021]; Laksono describes that if the bandwidth utilization exceeds a threshold, the system will provide the user with a list of options, one of which is to receive a transcoded version of the content to lower the bandwidth requirement).

With regard to claims 21 and 23, Laksono discloses the apparatus according to claim 20. Laksono further discloses wherein said processor assigns bandwidth associated with a channel slot that becomes available from one or more terminated video sessions on a given multiplexer of the one or more multiplexers in a given edge device of the one or more edge devices for use by

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the central transcoder to form a transcoded group of channels for the given multiplexer ([0026]; Laksono describes that if the bandwidth utilization exceed a second threshold, the server will reclaim the bandwidth from the client devices that elected to receive the stream at the nominal fee, and use for the client devices that elected to receive the program at an increased fee; [0021]; Laksono describes that one of the options of receiving the program at the increased fee is to receive the program transcoded at a reduced bit-rate, therefore, the one or more customers that receive the program this way will form a transcoded group of channels for that connection, as recited in claim 23).

Claims 24-26 are analyzed and rejected as applied to claim 20.

Claim 27 is analyzed and rejected as applied to claim 21.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5-8 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laksono in view of Levesque et al, US Patent # 7020892.

With regard to claims 5 and 7, Laksono discloses the method according to claim 1 by disclosing routing subsequent streams to a transcoder (when a threshold bandwidth has been reached), however Laksono fails to disclose

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converting a video session from a non-transcoded service to a transcoded service during a trick play transition.

Levesque describes a system and method for switching to a time shifted version of a video stream. Specifically, Levesque describes switching from a non-transcoded version of a stream to a transcoded version of a stream during a trick-play sequence (Figure 6 Levesque illustrates an uncompressed digital video input 78 that is both output as a real-time output 31 and encoded into compressed frames 84 to form a compressed, time shifted version of the stream; column 3, lines 35-56; Levesque describes that when a user pauses a video and initiates a trick play command, the controller switches the stream from the real-time uncompressed input to the time-shifted input)

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the feature of trick play transition from a non-transcoded to transcoded stream as taught by Levesque to the system that transcodes video streams when bandwidth has reached a certain threshold as taught by Laksono. The advantage would have been to reduce bandwidth needed for subsequent video sessions when bandwidth is limited.

With regard to claim 6 and 8, Laksono discloses the method of claim 1 by disclosing routing subsequent streams to a transcoder (when a threshold bandwidth has been reached), however Laksono fails to disclose converting a video session from a transcoded service to a non-transcoded service during a trick play transition. Levesque further discloses this feature (column 3, line 66 –

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column 4, line 3; Levesque describes switching back to a real-time stream when the viewer requests to view the program in real time, corresponding to a trick play operation. As discussed in the claim 5 & 7 rejection, these trick play operations can include a "pause" operation).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the feature of transitioning from a transcoded to a non-transcoded stream during a trick play session as taught by Levesque to the system of Laksono that transcodes streams when a threshold bandwidth has been reached. The advantage would have been to deliver a higher quality of service to the user if transcoding is not needed.

Claims 16-19 are rejected as analyzed with regard to claims 5-8.

5. Claims 3, 13-14, 22, and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laksono in view of Krause et al, US Patent # 6996129, hereafter Krause.

With regard to claim 3, Laksono discloses the method according to claim 2 in that he discloses a group of channels on a given multiplexer that are transcoded. Laksono fails to disclose the group of channels is a statistical multiplexed group of channels.

Krause discloses an advanced multiplexer designed for video on demand distribution. Specifically, (column 23, lines 2-11), Krause describes the use of a statistical multiplexer to eliminate the risk of overflowing a QAM channel if the channel is oversubscribed by using lower the data rate by converting from a

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constant data rate stream to a constant image quality stream, thereby using less bits when they are not needed.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add a statistical multiplexer as taught by Krause to the system of Laksono that multiplexes video streams in a VOD system. The advantage would have been to save bandwidth by using a variable bit rate stream.

With regard to claims 13-14, Laksono discloses the method of claim 12 in that he discloses creating a compressed group of channels and delivering them to the QAM edge devices. Laksono fails to disclose that these channels can be multiplexed at the server and sent at a constant bit rate to the edge devices.

Krause does disclose multiplexing a group of channels and delivering them at a constant bit rate to be distributed via the network (Figure 1, item 150B multiplexer that receives media from the server 110. Column 8, lines 60-66; Krause discloses that the single VBR streams (as specified in claim 14) are sent to the multiplexer to be multiplexed at a constant bit rate and sent to the modulator).

It would have been obvious to one of ordinary skill in the art at the time of the invention to add the feature of Krause of transporting the multiplexed group of channels via constant bit rate to the modulator to the system of Krause that sends programs to a modulator for distribution. The advantage would have been the ability to match the maximum bit rate of the modulator for more efficient distribution.

Claims 22 and 28 are analyzed and rejected as applied to claim 3.

Claims 29-30 are analyzed and rejected as applied to claims 13-14.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### **Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK D. FEATHERSTONE whose telephone number is (571)270-3750. The examiner can normally be reached on 8:00 AM - 5:00 PM M-F US Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Koenig can be reached on (571) 272-7296. The

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fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

E-Signed

/Mark Featherstone/ - Assistant Examiner

/Andrew Y Koenig/  
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